

In the Claims:

1-14. (cancelled)

15. (new) A method for forming a metallurgical interconnection for electronic devices, comprising:

providing a first interconnection metal having contact area and surface affinity to forming metallurgical contacts; and

providing a second interconnection metal capable of reflowing; wherein said first metal is shaped to maximize said contact area, consequently to increase the interconnection strength, and to stop nascent cracks propagating in said interconnection.

16. (new) The method according to Claim 15 wherein said first metal shape comprises castellations and corrugations.

17. (new) The method according to Claim 16 wherein said castellation and corrugation is created by stamping or etching.

18. (new) The method according to Claim 15 further comprising forming predetermined contours of said first metal arranged in concentric, parallel, or repetitive patterns.

19. (new) The method according to Claim 16 wherein said castellation and corrugation create grooves suitable for venting air during the reflow process by which said interconnection is created.

20. (new) The method according to Claim 15 wherein said first-metal-shape comprises protrusions creating wall-like obstacles in the interconnection zones of highest thermo-mechanical stress to stop propagating cracks.

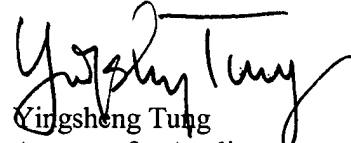
21. (new) The method according to Claim 15 wherein said first interconnection metal is a copper layer having a thickness between 10 and 30 μm .

22. (new) The method according to Claim 20 wherein said contact area is at least two times greater than the area of flat surface geometry.

23. (new) The method according to Claim 15 wherein said first interconnection metal is a copper layer of a thickness between 0.8 and 5 μm .

24. (new) The method according to Claim 23 wherein said contact area is at least 25 % greater than the area of flat surface geometry.
25. (new) The method according to Claim 15 wherein said surface affinity for metallurgical contacts is provided by a flash of gold, nickel/gold, or nickel/palladium.
26. (new) The method according to Claim 15 wherein said second interconnection metal is selected from a group consisting of tin, tin alloys including tin/indium, tin/silver, tin/bismuth, tin/lead, three-phase alloys, conductive adhesives, and z-axis conductive materials.

Respectfully submitted,



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